



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,445	12/09/2004	Toshihiro Nishii	2004-1930A	8623
52349 7590 09/10/2007 WENDEROTH, LIND & PONACK L.L.P. 2033 K. STREET, NW SUITE 800 WASHINGTON, DC 20006			EXAMINER NGUYEN, DONGHAI D	
			ART UNIT 3729	PAPER NUMBER
			MAIL DATE 09/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,445

Applicant(s)

NISHII ET AL.

Examiner

Donghai D. Nguyen

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 10-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 January 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/28/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 6, 2007 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,470,858 to McMaster.

McMaster discloses a method, comprising: transferring a first sheet (22/310, see Figs. 5 and 24), which extends in a first direction (long-side direction), in a second direction (right to left), so that the first direction of the first sheet is parallel to the second direction (see figs. 24-25); and sticking films (30, 30a, 300, 302) onto both surfaces of the first sheet while transferring the first sheet in a third direction orthogonal (vertical) to the first direction of the first sheet (see figs. 24-25), the films (30/30a) being arranged to be peeled off from the first sheet (portion 60 of sheet 22, see Fig. 8).

Regarding claim 10, McMaster discloses the first sheet (22/310) has a side which extends in the first direction (see Figs. 5 and 24).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of US Patent 7,063,768 to Tsujimoto et al.

Regarding claim 1, AAPA discloses a method of manufacturing a circuit board, comprising: transferring a first sheet (13), which extends in a first direction (202), in a second direction (201), so that the first direction of the first sheet is parallel to the second direction (see Fig. 6); and sticking films (14) onto both surfaces of the first sheet (see Fig. 7), the films (14) being arranged to be peeled off from the first sheet (13, see Fig. 9A-9D). However, AAPA does not teach transferring the first sheet in a third direction orthogonal to the first direction of the first sheet. Tsujimoto et al teach the step of transferring the first sheet (L1) in a third direction orthogonal to the first direction of the first sheet (L1, see Fig. 22) while attaching the first sheet (L1) to another sheet (S2) in transverse direction for forming a laminate structure (L2) having good thickness precision (See Col. 19, lines 22-23 or Col. 37, line 34). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the AAPA by utilized the transferring first sheet in the third

direction orthogonal to the first direction of the first sheet as taught by Tsujimoto et al to obtain a circuit board having good thickness precision.

Regarding claim 2, AAPA discloses sticking the films (14) comprises pressing the films on the first sheet with a heated roller (15) while transferring the first sheet in the third direction.

Regarding claims 3 and 4, AAPA discloses impregnating a reinforcing member of woven fabric (fiber sheet or glass cloth 11) with impregnation material (12) while transferring the reinforcing member in the second direction (201) so as to provide the first sheet (13), the reinforcing member having a direction corresponding to the first direction (202) of the first sheet, the direction of the reinforcing member being parallel to the second direction.

Regarding claim 5, AAPA discloses forming a via-hole (17) in the first sheet having the films stacked thereon; filling the via-hole with conductive paste (18); peeling off the films from the first sheet (See Fig. 9D); and heating and pressing metallic foils (19) onto both surfaces of the first sheet after said peeling off the films (See Fig. 9F).

Regarding claim 10, AAPA discloses the first sheet (13) has a side, which extends in the first direction (see Fig. 6).

Regarding claim 11, AAPA discloses the transferring a plurality of separate first sheets (13), each of which extends in the first direction, and wherein said sticking of the films (14) onto both surfaces of each of the separate first sheets.

Regarding claim 12, AAPA discloses continuous films (14) onto both surfaces of each of the separate first sheets (13) while transferring each of the separate first sheets (see Fig. 7).

Regarding claim 6, AAPA/Tsujimoto et al do not disclose the first sheet has the long-side direction is orthogonal to the first direction of the first sheet. It would have been an obvious matter of design choice to one having ordinary skill in the art the time the invention was made to choose the long side or short side of the first sheet is orthogonal to the first direction, since Applicants have not disclose the specific side of the first sheet is orthogonal to the first direction, solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the first direction as disclosed by AAPA/Tsujimoto et al.

Response to Arguments

5. Applicant's arguments filed June 28, 2007 regarding claims 1-6 and 10-12 have been fully considered but they are not persuasive.

A) Applicants argue, "McMaster does not disclose the films being arranged to be peeled off from the first sheet" (see "Remarks" page 5, 2nd paragraph). The Examiner disagrees and refers Applicants to Fig. 8 of McMaster, which so a portion of first sheet being peeled off from the films or vice versa. Applicants also argue, "McMaster does not disclose sticking films onto both surfaces of the first sheet while transferring the first sheet in a third direction" (see "Remarks" page 5, last paragraph). The Examiner disagrees because McMaster's reference discloses films (300' and 302') being transferred in the third direction (up and parallel to short side of substrate 310) orthogonal to the first direction (long side of substrate 310) of the first sheet (310) while being laminated to the first sheet (310) as shown in figure 24.

B) In response to applicant's argument that there is no suggestion or motivation to combine the references, the examiner recognizes that obviousness can only be established by

Art Unit: 3729

combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tsujimoto et al provides the reason for transferring the first sheet (L1) in the third direction orthogonal to the first direction while the first sheet being attached to another sheets (S2 as shown in Figs. 21-22) for obtaining the laminated structure having uniform thickness (see Col. 19, lines 22-23).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3729

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DN

August 31, 2007

A handwritten signature in black ink, appearing to read "Dybarov", is written over the signature line.